

REQUIRED SUPPLEMENTARY INFORMATION

Condition Assessments and Preservation of Infrastructure Eligible for Modified Approach

Roads

The County performs condition assessments on its network of roads through the King County Pavement Management System. This system generates a Pavement Condition Index (PCI) for each segment of arterial and local access road in the network. The PCI is a numerical index from zero to one hundred (0–100) that represents the pavement's functional condition based on the quantity, severity, and type of visual distress, such as pavement cracking. Based on the PCI score, condition ratings are assigned as follows: a PCI of less than 30 is defined as "poor to substandard" (heavy pavement cracking and potholes); a PCI of 30 or more but less than 50 is defined to be in "fair" condition (noticeable cracks and/or utility cuts); and a PCI of between 50 and higher is defined to be in "excellent to good" condition (relatively smooth roadway). Condition assessments are undertaken every three years.

The most recent complete condition assessment of the County's roads was done during the period 1999 through 2001 and the results are summarized below.

<u>Condition ratings</u>	<u>Length (miles)</u>	<u>%</u>
Arterial roads		
Excellent to good	451.08	83.05
Fair	44.46	8.19
Poor to substandard	47.55	8.76
Total	<u>543.09</u>	<u>100.00</u>
Local access roads		
Excellent to good	1,031.14	80.01
Fair	132.27	10.26
Poor to substandard	125.47	9.73
Total	<u>1,288.88</u>	<u>100.00</u>

It is the policy of the King County Roads Division to maintain at least 80 percent of the road system at a PCI of 40 or better. The following table (derived from the table of condition ratings) shows the number and percentage of miles of roads that meet the 40 PCI level.

<u>PCI score interval</u>	<u>Length (miles)</u>	<u>%</u>
Arterial roads		
PCI 40 - 100	477.65	87.95
PCI 0 - 39	65.44	12.05
Total	<u>543.09</u>	<u>100.00</u>
Local access roads		
PCI 40 - 100	1,108.24	85.99
PCI 0 - 39	180.64	14.01
Total	<u>1,288.88</u>	<u>100.00</u>

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The majority of roads that fall below the established rating (PCI = 40) are local access roads that are situated in rural areas.

Below is information on planned (budgeted) and actual expenditures incurred to maintain and preserve the road network at or above the minimum acceptable condition level from 1999 to 2003. The budgeted amount is equivalent to the anticipated amount needed to maintain roads up to the required condition level.

	<u>(amounts in millions)</u>				
	<u>2003</u>	<u>2002</u>	<u>2001</u>	<u>2000</u>	<u>1999</u>
Budgeted	\$ 38.83	\$ 37.04	\$ 34.47	\$ 31.48	\$ 28.19
Expended	34.59	34.95	34.39	32.02	27.35

Underspending of budgeted amounts usually results when roads are removed from the project list because of conflicts with anticipated utility work; lowering of priority due to cost efficiency considerations, such as when only a few roads are to be resurfaced in remote locations; and weather-related work reduction or stoppages.

Bridges

King County currently maintains 181 bridges. Physical inspections to determine the condition of the bridge and the degree of wear and deterioration are carried out at least every two years. Inspections reveal deficiencies in bridges such as steel corrosion, damaged guardrails, rotten timbers, deteriorated bridge decks, bank erosion, and cracked concrete. These are documented in an inspections report along with recommended repairs and needed services.

Each year the County undergoes a bridge prioritization process to determine potential candidates for replacement or rehabilitation. A weighted 10-point priority scale (sufficiency rating, seismic rating, geometrics, hydraulics, load limits, traffic safety, serviceability, importance, useful life, and structural concern) ranks the bridges in order; the results are considered in the planning and programming of major bridge studies and construction projects in the Roads Capital Improvement Program.

A key element in the priority scale is the sufficiency rating, the measure considered by state and federal governments as the basis for establishing eligibility and priority for bridge replacement or rehabilitation. Sufficiency rating is a numerical rating of a bridge based on its structural adequacy and safety, essentiality for public use, and its serviceability and functional obsolescence. This index may vary from 100 (a bridge in new condition) to 0 (a bridge incapable of carrying traffic). A sufficiency rating of 50 or over indicates a bridge with a good deal of service life remaining. A bridge that scores between 0 and 49 would be considered for replacement funding evaluation, though typically only bridges that score less than 30 are selected for Federal replacement funding.

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Below is a summary of bridge sufficiency ratings measured during 2002.

<u>Bridge sufficiency rating</u>	<u>Number of bridges</u>
0 - 20	10
21 - 30	7
31 - 49	16
50 - 100	148
Total	<u>181</u>

It is the policy of the King County Roads Division to maintain bridges in such a manner that no more than 12 will have a sufficiency rating of 20 or less. A rating of 20 or less is usually indicative of a bridge with a structural deficiency. The most common remedy is full replacement or rehabilitation of the bridge. As of December 31, 2003, there were 10 bridges with a sufficiency rating of 20 or below.

Amounts budgeted and spent to maintain and preserve bridges from 1999-2003 are shown in the following table.

	<u>(amounts in millions)</u>				
	<u>2003</u>	<u>2002</u>	<u>2001</u>	<u>2000</u>	<u>1999</u>
Budgeted	\$ 3.81	\$ 4.21	\$ 4.28	\$ 3.87	\$ 3.04
Expended	3.35	3.83	3.78	2.09	2.39

The budgeted amount is equivalent to the anticipated amount needed to maintain and preserve the bridges up to the required condition level. Backlogs in maintenance work orders greatly affect the trend in maintenance costs. Such backlogs could result from increased bridge traffic, higher weight loads, manpower shortages, stringent environmental restrictions, and an aging bridge inventory.